Source water body
The spatial area that contains the organisms that are at risk of entrainment at a desalination facility as determined by factors that may include, but are not limited to, biological, hydrodynamic, and oceanographic data.

State Water Quality Protection Areas (SWQPAs)
Non-terrestrial marine or estuarine areas designated to protect marine species or biological communities from an undesirable alteration in natural water quality. All Areas of Special Biological Significance (ASBS) that were previously designated by the State Water Board in Resolution Nos. 74-28, 74-32, and 75-61 are now also classified as a subset of State Water Quality Protection Areas and require special protections afforded by the Ocean Plan.

Statistical Threshold Value (STV)
Statistical Threshold Value for the bacteria water quality objective is a set value that approximates the 90th percentile of the water quality distribution of a bacterial population. The STV for the bacteria water quality objective is 110 cfu/100mL as set forth in Chapter II.B.1.a. of the Ocean Plan.

Subsurface intake
For the purpose of implementing Chapter III.M of the Ocean Plan, subsurface intake is an intake withdrawing seawater from the area beneath the ocean floor or beneath the surface of the earth inland from the ocean.

Surfgrass beds
Aggregations of marine flowering plants of the genus *Phyllospadix*.

TCDD equivalents
The sum of the concentrations of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) multiplied by their respective toxicity factors, as shown in the table below.

Isomer Group	Toxicity Equivalence Factor
2,3,7,8-tetra CDD	1.0
2,3,7,8-penta CDD	0.5
2,3,7,8-hexa CDDs	0.1
2,3,7,8-hepta CDD	0.01
octa CDD	0.001
2,3,7,8 tetra CDF	0.1
1,2,3,7,8 penta CDF	0.05
2,3,4,7,8 penta CDF	0.5
2,3,7,8 hexa CDFs	0.1
2,3,7,8 hepta CDFs	0.01
octa CDF	0.001

Toxicity Identification Evaluation (TIE)
A set of procedures conducted to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.)

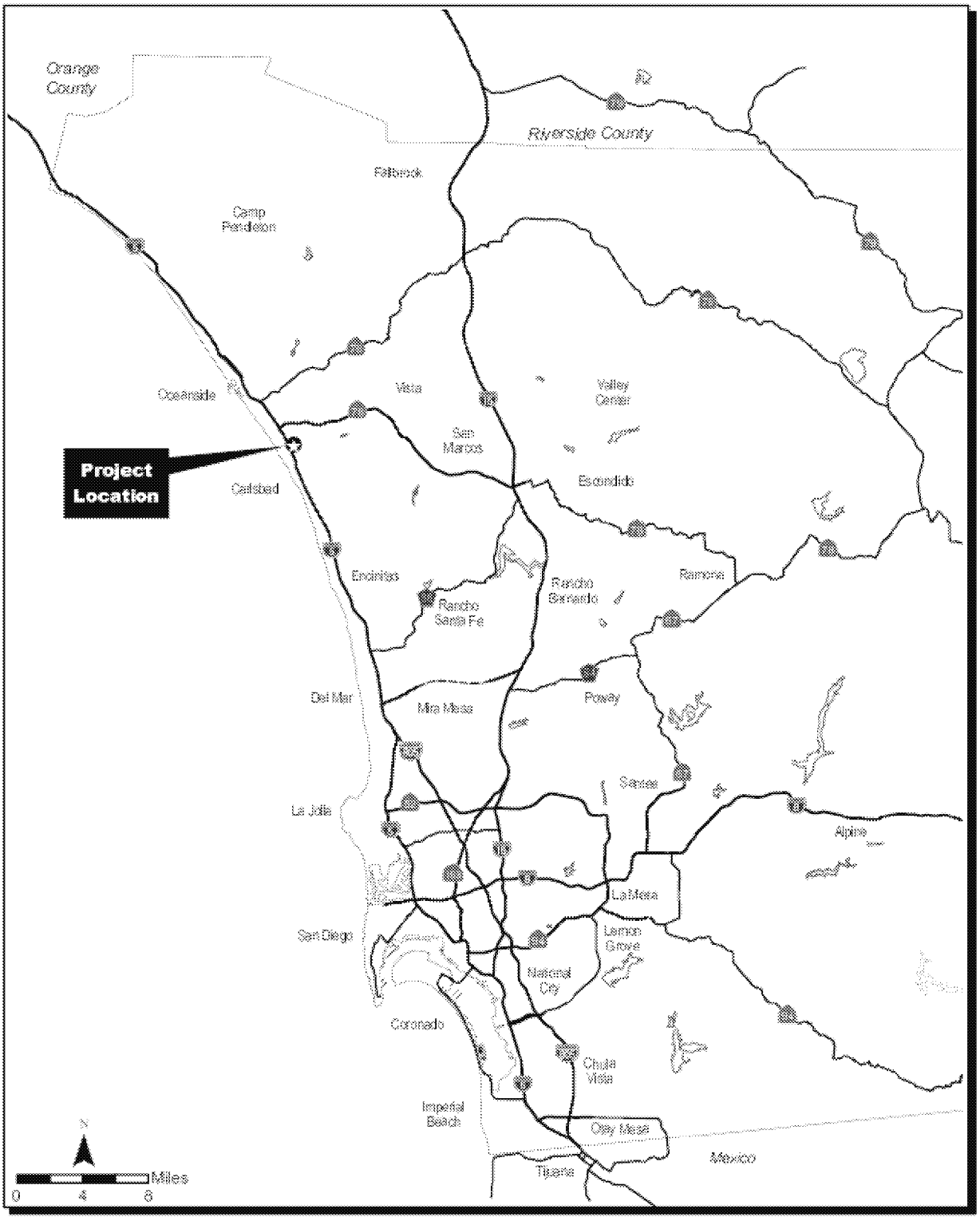
Toxicity Reduction Evaluation (TRE)
A study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of data relevant to the toxicity, including additional toxicity testing, and an evaluation of facility operations and maintenance practices, and best management practices. A Toxicity Identification Evaluation (TIE) may be required as part of the TRE, if appropriate. (A TIE is a set of procedures to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.)

Waste
As used in the Ocean Plan, waste includes a Discharger's total discharge, of whatever origin, i.e., gross, not net, discharge.

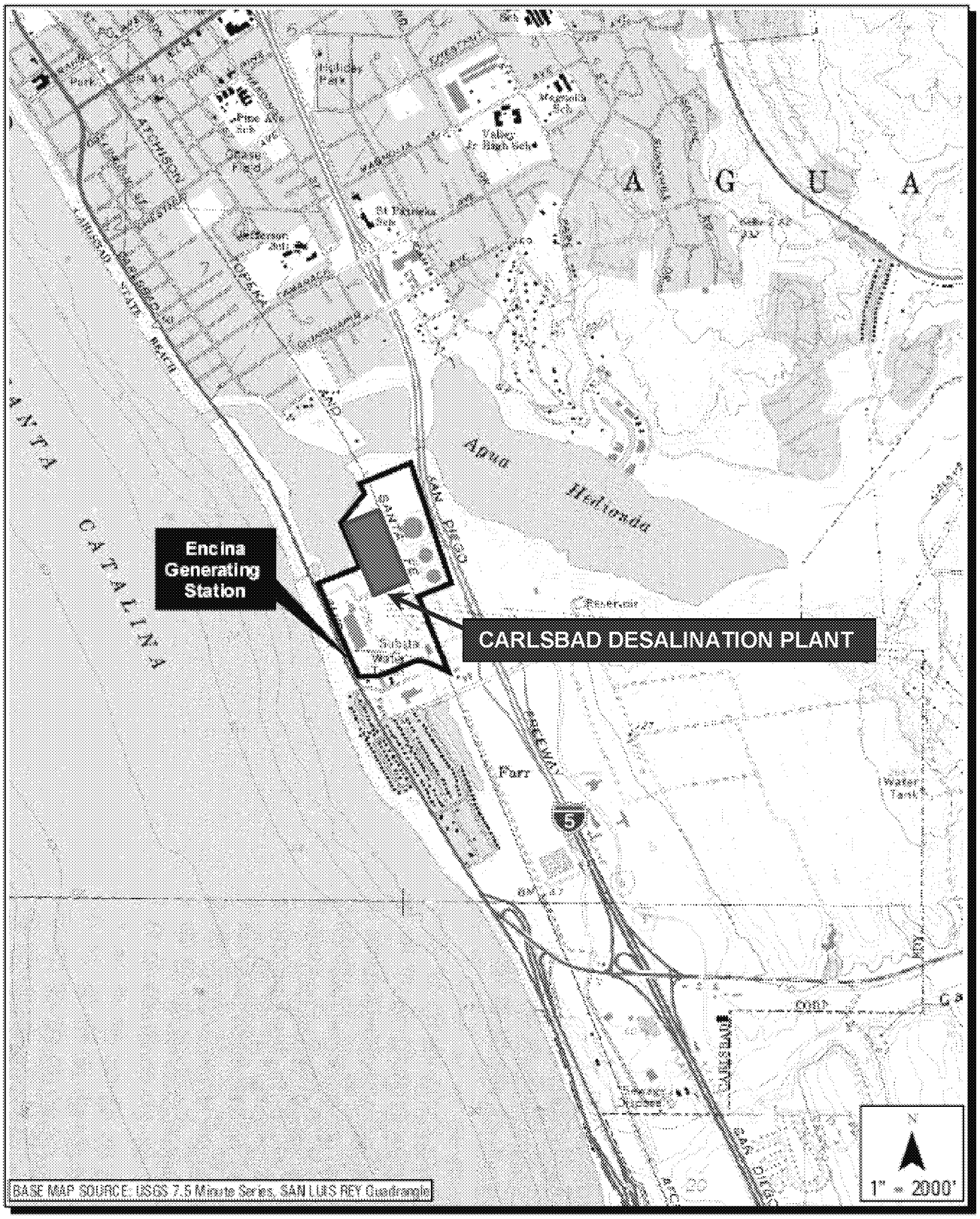
Zone of Initial Dilution
Zone of initial dilution (ZID or mixing zone) is the area where an effluent discharge undergoes initial dilution and is extended to cover the secondary mixing in the ambient waterbody. A ZID is an allocated impact zone where water quality criteria can be exceeded as long as acutely toxic conditions are prevented. For the purposes of this Order the ZID and BMZ are two separately defined areas. The zone of initial dilution for this Order is set at 304.8 meters (1,000 feet) offshore of the end of the discharge channel, consistent with the prior Order No. R9-2006-0065.

ATTACHMENT B – MAPS

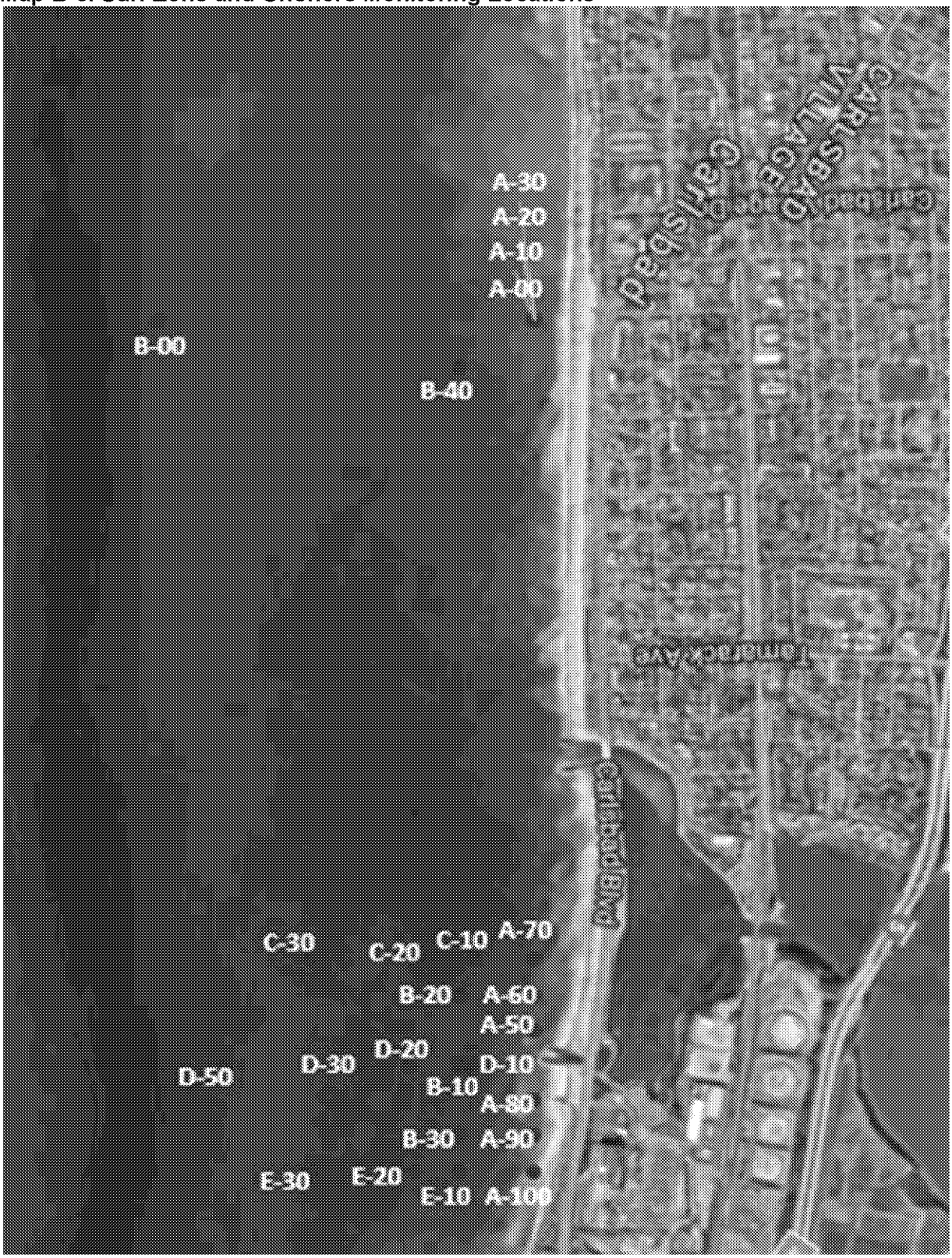
Map B-1. Location Map



Map B-2. Vicinity Map

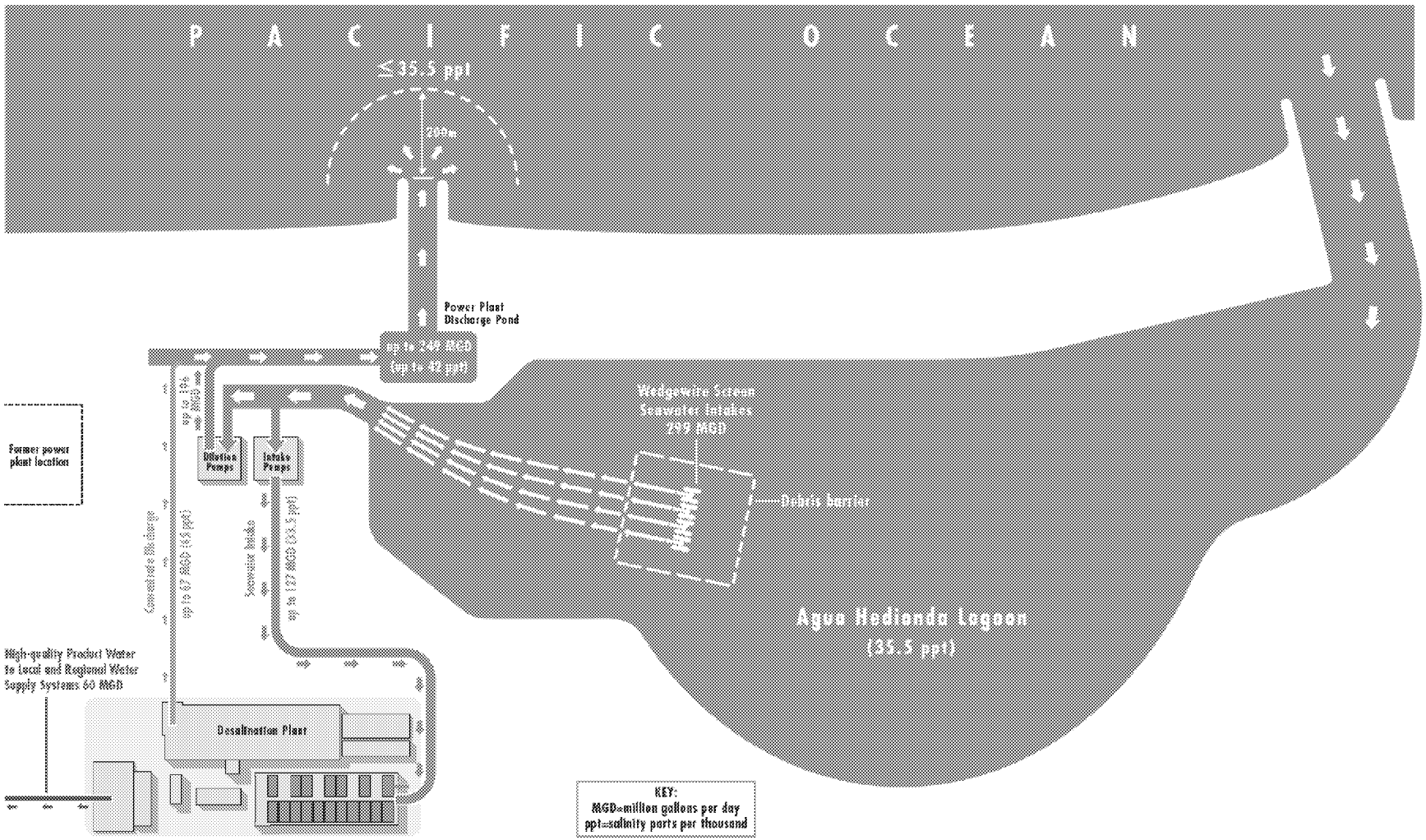


Map B-3. Surf Zone and Offshore Monitoring Locations



ATTACHMENT C – FLOW SCHEMATICS

Flow Schematic C-1. Facility Operations



ATTACHMENT D – STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Discharger must comply with all of the terms, requirements, and conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code (Water Code) and is grounds for enforcement action; permit termination, revocation and reissuance, or modification; denial of a permit renewal application; or a combination thereof. (title 40 of the Code of Federal Regulations (40 CFR) section 122.41(a); Water Code sections 13261, 13263, 13265, 13268, 13000, 13001, 13304, 13350, 13385.)
2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 CFR section 122.41(a)(1))

B. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order. (40 CFR section 122.41(c))

C. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment. (40 CFR section 122.41(d))

D. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order. (40 CFR section 122.41(e))

E. Property Rights

1. This Order does not convey any property rights of any sort, or any exclusive privileges. (40 CFR section 122.41(g))
2. The issuance of this Order does not authorize any injury to persons or property, or invasion of other private rights, or any infringement of state or local law or regulations. (40 CFR section 122.5(c))

F. Inspection and Entry

The Discharger shall allow the San Diego Water Board, State Water Board, U.S. EPA, and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (33 United States Code (U.S.C.) section 1318(a)(4)(b); 40 CFR section 122.41(i); Water Code sections 13267, 13383):

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (33 U.S.C. section 1318(a)(4)(b)(i); 40 CFR section 122.41(i)(1); Water Code sections 13267, 13383);
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (33 U.S.C. section 1318(a)(4)(b)(ii); 40 CFR section 122.41(i)(2); Water Code sections 13267, 13383);
3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (33 U.S.C. section 1318(a)(4)(b)(ii); 40 CFR section 122.41(i)(3); Water Code sections 13267, 13383); and
4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (33 U.S.C. section 1318(a)(4)(b); 40 CFR section 122.41(i)(4); Water Code sections 13267, 13383)

G. Bypass

1. Definitions
   a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. (40 CFR section 122.41(m)(1)(i))
   b. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 CFR section 122.41(m)(1)(ii))
2. Bypass not exceeding limitations. The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 CFR section 122.41(m)(2))
3. Prohibition of bypass. Bypass is prohibited, and the San Diego Water Board may take enforcement action against a Discharger for bypass, unless (40 CFR section 122.41(m)(4)(i)):
   a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 CFR section 122.41(m)(4)(i)(A));
   b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 CFR section 122.41(m)(4)(i)(B)); and
   c. The Discharger submitted notice to the San Diego Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 CFR section 122.41(m)(4)(i)(C))
4. The San Diego Water Board may approve an anticipated bypass, after considering its adverse effects, if the San Diego Water Board determines that it will meet the three

conditions listed in Standard Provisions – Permit Compliance I.G.3 above. (40 CFR section 122.41(m)(4)(ii))

5. Notice

   a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass. (40 CFR section 122.41(m)(3)(i))

   b. Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). (40 CFR section 122.41(m)(3)(ii))

H. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. (40 CFR section 122.41(n)(1))

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 CFR section 122.41(n)(2))

2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 CFR section 122.41(n)(3)):

   a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 CFR section 122.41(n)(3)(i));

   b. The permitted facility was, at the time, being properly operated (40 CFR section 122.41(n)(3)(ii));

   c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) (40 CFR section 122.41(n)(3)(iii)); and

   d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 CFR section 122.41(n)(3)(iv))

3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 CFR section 122.41(n)(4))

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition. (40 CFR section 122.41(f))

B. Duty to Reapply

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit. (40 CFR section 122.41(b))

C. Transfers

This Order is not transferable to any person except after notice to the San Diego Water Board. The San Diego Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the Water Code. (40 CFR section 122.41(l)(3), 122.61)

III. STANDARD PROVISIONS – MONITORING

A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 CFR section 122.41(j)(1))

B. Monitoring must be conducted according to test procedures approved under 40 CFR part 136 for the analyses of pollutants unless another method is required under 40 CFR chapter 1, subchapters N or O. Monitoring must be conducted according to sufficiently sensitive test methods approved under 40 CFR part 136 for the analysis of pollutants or pollutant parameters or as required under 40 CFR chapter 1, subchapter N or O. For the purposes of this paragraph, a method is sufficiently sensitive when:

1. The method minimum level (ML) is at or below the level of the most stringent effluent limitation established in the permit for the measured pollutant or pollutant parameter, and either the method ML is at or below the level of the most stringent applicable water quality criterion for the measured pollutant or pollutant parameter or the method ML is above the applicable water quality criterion but the amount of the pollutant or pollutant parameter in the facility's discharge is high enough that the method detects and quantifies the level of the pollutant or pollutant parameter in the discharge; or
2. The method has the lowest ML of the analytical methods approved under 40 CFR part 136 or required under 40 CFR chapter 1, subchapter N or O for the measured pollutant or pollutant parameter.

In the case of pollutants or pollutant parameters for which there are no approved methods under 40 CFR part 136 or otherwise required under 40 CFR chapter 1, subchapters N or O, monitoring must be conducted according to a test procedure specified in this Order for such pollutants or pollutant parameters. (40 CFR sections 122.21(e)(3),122.41(j)(4), 122.44(i)(1)(iv))

IV. STANDARD PROVISIONS – RECORDS

A. The Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three years from the date of the sample, measurement, report or application. This period may be extended by request of the San Diego Water Board Executive Officer at any time. (40 CFR section 122.41(j)(2))

B. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements (40 CFR section 122.41(j)(3)(i));

2. The individual(s) who performed the sampling or measurements (40 CFR section 122.41(j)(3)(ii));
3. The date(s) analyses were performed (40 CFR section 122.41(j)(3)(iii));
4. The individual(s) who performed the analyses (40 CFR section 122.41(j)(3)(iv));
5. The analytical techniques or methods used (40 CFR section 122.41(j)(3)(v)); and
6. The results of such analyses. (40 CFR section 122.41(j)(3)(vi))

C. Claims of confidentiality for the following information will be denied (40 CFR section122.7(b)):

1. The name and address of any permit applicant or Discharger (40 CFR section 122.7(b)(1)); and
2. Permit applications with attachments, permits, and effluent data. (40 CFR section 122.7(b)(2))

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The Discharger shall furnish to the San Diego Water Board, State Water Board, or U.S. EPA within a reasonable time, any information which the San Diego Water Board, State Water Board, or U.S. EPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order, or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the San Diego Water Board, State Water Board, or U.S. EPA copies of records required to be kept by this Order. (40 CFR section 122.41(h); Water Code sections 13267, 13383)

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the San Diego Water Board, State Water Board, and/or U.S. EPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, and V.B.5 below. (40 CFR section 122.41(k))
2. All permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of U.S. EPA). (40 CFR section 122.22(a)(1))
3. All reports required by this Order and other information requested by the San Diego Water Board, State Water Board, or U.S. EPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
   a. The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.2 above (40 CFR section 122.22(b)(1));
   b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 CFR section 122.22(b)(2)); and

c. The written authorization is submitted to the San Diego Water Board and State Water Board. (40 CFR section 122.22(b)(3))

4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting V.B.3 above must be submitted to the San Diego Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 CFR section 122.22(c))

5. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above shall make the following certification:

   "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." (40 CFR section 122.22(d))

6. Any person providing the electronic signature for documents described in Standard Provisions – V.B.1, V.B.2, or V.B.3 that are submitted electronically shall meet all relevant requirements of Standard Provisions – Reporting V.B, and shall ensure that all relevant requirements of 40 CFR part 3 (Cross-Media Electronic Reporting) and 40 CFR part 127 (NPDES Electronic Reporting Requirements) are met for that submission. (40 CFR section 122.22(e))

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (MRP, Attachment E) in this Order. (40 CFR section 122.41(l)(4))

2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the San Diego Water Board or State Water Board. As of December 21, 2016, all reports and forms must be submitted electronically to the initial recipient defined in Standard Provisions – Reporting V.J and comply with 40 CFR part 3, 40 CFR section 122.22, and 40 CFR part 127. (40 CFR section 122.41(l)(4)(i))

3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 CFR part 136, or another method required for an industry-specific waste stream under 40 CFR subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the San Diego Water Board. (40 CFR section 122.41(l)(4)(ii))

4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 CFR section 122.41(l)(4)(iii))

D. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order, shall be submitted no later than 14 days following each schedule date. (40 CFR section 122.41(l)(5))

E. Twenty-Four Hour Reporting

1. The Discharger shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A report shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

   For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports must include the data described above (with the exception of time of discovery) as well as the type of event (i.e., combined sewer overflow, sanitary sewer overflow, or bypass event), type of overflow structure (e.g., manhole, combined sewer overflow outfall), discharge volume untreated by the treatment works treating domestic sewage, types of human health and environmental impacts of the event, and whether the noncompliance was related to wet weather.

2. The following shall be included as information that must be reported within 24 hours:

   a. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 CFR section 122.41(l)(6)(ii)(A))

   b. Any upset that exceeds any effluent limitation in this Order. (40 CFR section 122.41(l)(6)(ii)(B))

3. The San Diego Water Board may waive the above required written report on a case-by-case basis if an oral report has been received within 24 hours. (40 CFR section 122.41(l)(6)(ii)(B))

F. Planned Changes

The Discharger shall give notice to the San Diego Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when (40 CFR section 122.41(l)(1)):

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in part 122.29(b) (40 CFR section 122.41(l)(1)(i)); or

2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order. (40 CFR section 122.41(l)(1)(ii))

G. Anticipated Noncompliance

The Discharger shall give advance notice to the San Diego Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with this Order's requirements. (40 CFR section 122.41(l)(2))

H. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting V.C, V.D, and V.E above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting V.E above. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports shall contain the information described in Standard Provision –

Reporting V.E and the applicable required data in appendix A to 40 CFR part 127. The San Diego Water Board may also require the Discharger to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section. (40 CFR section 122.41(l)(7))

I. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application or submitted incorrect information in a permit application or in any report to the San Diego Water Board, State Water Board, or U.S. EPA, the Discharger shall promptly submit such facts or information. (40 CFR section 122.41(l)(8))

J. Initial Recipient for Electronic Reporting Data

The owner, operator, or the duly authorized representative is required to electronically submit NPDES information specified in appendix A to 40 CFR part 127 to the initial recipient defined in 40 CFR section 127.2(b). U.S. EPA will identify and publish the list of initial recipients on its website and in the Federal Register, by state and by NPDES data group [see 40 CFR section 127.2(c)]. U.S. EPA will update and maintain this listing. (40 CFR section 122.41(l)(9))

VI. STANDARD PROVISIONS – ENFORCEMENT

A. The San Diego Water Board is authorized to enforce the terms of this Order under several provisions of the Water Code, including, but not limited to, sections 13268, 13385, 13386, and 13387.

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Publicly-Owned Treatment Works (POTWs) – Not Applicable

ATTACHMENT E – MONITORING AND REPORTING PROGRAM
Contents

Tables

ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

Section 308 of the federal Clean Water Act (CWA) and sections 122.41(h), (j)-(l), 122.44(i), and 122.48 of title 40 of the Code of Federal Regulations (40 CFR) require that all National Pollutant Discharge Elimination System (NPDES) permits specify monitoring and reporting requirements. California Water Code (Water Code or CWC) sections 13267 and 13383 also authorize the San Diego Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. Pursuant to this authority this MRP establishes conditions for Poseidon Resources (Channelside) LP (Discharger) to conduct routine or episodic self-monitoring of the discharges regulated under this Order at specified influent, internal operations, effluent, and receiving water monitoring locations. The MRP requires the Discharger to report the results to the San Diego Water Board with information necessary to evaluate discharge characteristics and compliance status.

The purpose of this MRP is to determine and ensure compliance with effluent limitations and other requirements established in this Order, assess treatment efficiency, characterize effluents, and characterize the receiving water and the effects of the discharge on the receiving water. This MRP also specifies requirements concerning the proper use, maintenance, and installation of monitoring equipment and methods, and the monitoring type intervals and frequency necessary to yield data that are representative of the activities and discharges regulated under this Order.

Each monitoring section contains an introductory paragraph summarizing why the monitoring is needed and the key management questions the monitoring is designed to answer. In developing the list of key management questions the San Diego Water Board considered four basic types of information for each question:

- *Management Information Need* – Why does the San Diego Water Board need to know the answer?
- *Monitoring Criteria* – What monitoring will be conducted for deriving an answer to the question?
- *Expected Product* – How should the answer be expressed and reported?
- *Possible Management Actions* – What actions will be potentially influenced by the answer?

The framework for this monitoring program has three components that comprise a range of spatial and temporal scales: core monitoring, regional monitoring, and special studies.

1. Core monitoring consists of the basic site-specific monitoring necessary to measure compliance with individual effluent limits and/or impacts to receiving water quality. Core monitoring is typically conducted in the immediate vicinity of the discharge by examining local scale spatial effects.
2. Regional monitoring provides information necessary to make assessments over large areas and serves to evaluate cumulative effects of all anthropogenic inputs. Regional monitoring data also assists in the interpretation of core monitoring studies.
3. Special studies are directed monitoring efforts designed in response to specific management or research questions identified through either core or regional monitoring programs. Often, they are used to help understand core or regional monitoring results where a specific environmental process is not well understood, or to address unique issues of local importance.

I. GENERAL MONITORING PROVISIONS

A. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring points specified in section II, Table E-1 below and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring points shall not be changed without notification to and the approval of the San Diego Water Board.

B. Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated, and maintained to ensure that the accuracy of the measurement is consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than ±5 percent from true discharge rates throughout the range of expected discharge volumes.

C. Monitoring must be conducted according to U.S. Environmental Protection Agency (U.S. EPA) test procedures approved at 40 CFR part 136, *Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act* as amended, or unless other test procedures are specified in this MRP and/or by the San Diego Water Board.

D. All analyses shall be performed in a laboratory certified to perform such analyses by the Division of Drinking Water (DDW) or a laboratory approved by the San Diego Water Board. The laboratory must be accredited under the DDW Environmental Laboratory Accreditation Program (ELAP) to ensure the quality of analytical data used for regulatory purposes to meet the requirements of this Order. Additional information on ELAP can be accessed at: http://www.waterboards.ca.gov/drinking_water/certlic/labs/ELAP-CAInformation.shtml

E. Records of monitoring information shall include information required under Standard Provisions, section IV (Attachment D).

F. All monitoring instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be maintained and calibrated in accordance with the manufacturer's recommendations to ensure continued accuracy of the devices.

G. The Discharger shall have, and implement, an acceptable written quality assurance (QA) plan for laboratory analyses. Duplicate chemical analyses must be conducted on a minimum of 10 percent of the samples or at least one sample per month, whichever is greater. A similar frequency shall be maintained for analyzing spiked samples. When requested by U.S. EPA or the San Diego Water Board, the Discharger shall participate in a NPDES discharge monitoring report QA performance study. The Discharger shall have a success rate equal to or greater than 80 percent.

H. Analysis for toxic pollutants, with effluent limitations or performance goals based on water quality objectives of the *Water Quality Control Plan, Ocean Waters of California, California Ocean Plan* (Ocean Plan), shall be conducted in accordance with procedures described in the Ocean Plan.

II. MONITORING LOCATIONS

The Discharger shall establish the following monitoring locations to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order:

Table E-1. Monitoring Station Locations

Monitoring Location Name	Monitoring Location Description[1]
M-INF	At a location upstream of all in-plant return flows where a representative influent sample can be obtained. This sampling location shall be relocated as necessary to provide a representative influent sample once permanent stand-alone operations (defined in section Attachment A of this Order) begin.

Monitoring Location Name	Monitoring Location Description[1]
M-001	At a location downstream of all contributing flows to the Facility effluent, prior to combining with Encina Power Station effluent or augmentation flow.
M-002	At the final effluent pond that contains combined Facility and Encina Power Station effluent, or Facility process flows and augmented dilution flows, prior to discharge to the ocean through the discharge channel.
SURF ZONE MONITORING STATIONS	
A-00	7,000 feet upcoast (northerly) of the discharge channel in the surf zone at the surface (approximately: 33° 9' 16" N, 117° 21' 8" W)
A-50	328 feet upcoast (northerly) of the discharge channel in the surf zone at the surface (approximately: 33° 8' 20" N, 117° 20' 27" W)
A-60	656 feet upcoast (northerly) of the discharge channel in the surf zone at the surface (approximately: 33° 8' 23" N, 117° 20' 28" W)
A-70	1000 feet upcoast (northerly) of the discharge channel in the surf zone at the surface (approximately: 33° 8' 27" N, 117° 20' 30" W)
A-80	328 feet downcoast (southerly) of the discharge channel in the surf zone at the surface (approximately: 33° 8' 15" N, 117° 20' 23" W)
A-90	656 feet downcoast (southerly) of the discharge channel in the surf zone at the surface (approximately: 33° 8' 12" N, 117° 20' 21" W)
A-100	1,000 feet downcoast (southerly) of the discharge channel in the surf at the surface zone (approximately: 33° 8' 9" N, 117° 20' 20" W)
OFFSHORE MONITORING STATIONS	
A-10	7,000 feet upcoast (northerly) of the discharge channel at the 10-foot depth contour (at mean lower low water (MLLW))
A-20	7,000 feet upcoast (northerly) of the discharge channel at the 20-foot depth contour (at MLLW)
A-30	7,000 feet upcoast (northerly) of the discharge channel at the 30-foot depth contour (at MLLW)
B-00 (formerly A-40)	7,000 feet upcoast (northerly) of the discharge channel, 3,400 feet offshore (approximately: 33° 8' 57" N, 117° 21' 42" W)
B-10 / D-10	Normal (west) of the discharge channel, 656 feet (200 meters) off the end of the discharge channel (approximately: 33° 8' 14" N, 117° 20' 31" W)
B-20	656 feet north, upcoast of the discharge channel, 656 feet off the end of the discharge channel (approximately: 33° 8' 19" N, 117° 20' 35" W)
B-30	656 feet south, downcoast of the discharge channel, 656 feet off the end of the discharge channel (approximately: 33° 8' 8" N, 117° 20' 28" W)
B-40	7,000 feet upcoast (northerly) of the discharge channel, 656 feet off the end of the discharge channel (approximately: 33° 9' 13" N, 117° 21' 15" W)
C-10	1,000 feet upcoast (northerly) of the discharge channel, 521 feet offshore (approximately: 33° 8' 24" N, 117° 20' 35" W)
C-20	1,000 feet upcoast (northerly) of the discharge channel, 956 feet offshore (approximately: 33° 8' 22" N, 117° 20' 39" W)
C-30	1,000 feet upcoast (northerly) of the discharge channel, 2,000 feet offshore (approximately: 33° 8' 16" N, 117° 20' 50" W)
D-10 / B-10	Normal to the discharge channel, 656 feet (200 meters) offshore (approximately: 33° 8' 14" N, 117° 20' 31" W)
D-20	Normal to the discharge channel, 1,129 feet offshore (approximately: 33° 8' 11" N, 117° 20' 36" W)

Monitoring Location Name	Monitoring Location Description[1]
D-30	Normal to the discharge channel, 1,600 feet offshore (approximately: 33° 8' 8" N, 117° 20' 40" W)
D-50	Normal to the discharge channel, 2,800 feet offshore (approximately: 33° 8' 1" N, 117° 20' 52" W)
E-10	1,000 feet downcoast (southerly) of the discharge channel, 652 feet offshore
E-20	1,000 feet downcoast (southerly) of the discharge channel, 1,086 feet offshore (approximately: 33° 8' 5" N, 117° 20' 26" W)
E-30	1,000 feet downcoast (southerly) of the discharge channel, 2,000 feet offshore (approximately: 33° 7' 58" N, 117° 20' 39" W)

1. Latitude and Longitude are values are approximations of the location for administrative purposes.

III. CORE MONITORING REQUIREMENTS

A. Influent Monitoring Requirements

Influent monitoring is the collection and analysis of samples or measurements of seawater prior to the desalination process. Influent monitoring of seawater withdrawn from the Agua Hedionda Lagoon prior to entering the Facility is necessary to address the following questions:

- Is the intake flow consistent with permit conditions and expectations?
- What is the concentration factor for pollutants within the effluent compared to the influent? Is this consistent with expectations considered during permit development?
- Are intake credits reasonable for future permit development efforts?

The Discharger shall monitor the influent at Monitoring Location M-INF. Influent samples shall be collected on the same day as, and shortly before the collection of effluent samples. Influent shall be monitored as follows.

Table E-2. Influent Monitoring

Parameter	Units[1]	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow[2]	MGD	Recorder/Totalizer	Continuous	--
Salinity	ppt	Grab	1/Week	[2]
Temperature	°F	Grab	1/Week	[2]

1. See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order.
2. During interim operations while using the existing pumps prior to operation of the new intake pumps, the flowrate shall be calculated based on the rated flow of pumps in service.
3. As required under 40 CFR part 136.

B. Effluent Monitoring Requirements

Effluent monitoring is the collection and analysis of samples or measurements of effluents, after all treatment processes, to determine and quantify contaminants and demonstrate compliance with applicable effluent limitations, standards, and other requirements of this Order.

Effluent monitoring is necessary to address the following questions:

- Does the effluent comply with permit effluent limitations, performance goals, and other requirements of this Order, thereby ensuring that water quality standards are achieved in the receiving water?

- What is the mass of constituents that are discharged?
- Is the effluent concentration or mass loading changing over time?
- Is the Facility being properly operated and maintained to ensure compliance with the conditions of the Order?

The Discharger shall monitor the effluent at the specified monitoring location when the Facility is discharging brine as follows:

Table E-3. Effluent Monitoring when Discharging Brine

Parameter[1]	Monitoring Location	Units[2, 3]	Sample Type	Minimum Sampling Frequency
Flow[4]	M-001 & M-002	MGD	Recorder/Totalizer	Continuous[5]
Total Suspended Solids (TSS)	M-001	mg/L	Grab	1/Week
pH	M-001	standard units	Grab	1/Week
Oil and Grease	M-001	mg/L	Grab	1/Week
Settleable Solids	M-001	ml/L	Grab	1/Week
Turbidity	M-001	NTU	Grab	1/Week
Salinity	M-001 & M-002	ppt	Grab	1/Week
Temperature	M-001	°F	Grab	1/Week
Electrical Conductivity	M-002	Deci-siemens per meter	Recorder/Totalizer	Continuous
TABLE 1 PARAMETERS FOR PROTECTION OF MARINE AQUATIC LIFE				
Arsenic, Total Recoverable	M-001	µg/L	Grab	1/Quarter
Cadmium, Total Recoverable	M-001	µg/L	Grab	1/Quarter
Chromium (VI)	M-001	µg/L	Grab	1/Quarter
Copper, Total Recoverable	M-001	µg/L	Grab	1/Quarter
Lead, Total Recoverable	M-001	µg/L	Grab	1/Quarter
Mercury, Total Recoverable	M-001	µg/L	Grab	1/Quarter
Nickel, Total Recoverable	M-001	µg/L	Grab	1/Quarter
Selenium, Total Recoverable	M-001	µg/L	Grab	1/Quarter
Silver, Total Recoverable	M-001	µg/L	Grab	1/Quarter
Zinc, Total Recoverable	M-001	µg/L	Grab	1/Quarter
Cyanide, Total[6]	M-001	µg/L	Grab	1/Quarter
Total Chlorine Residual	M-001	µg/L	Grab	1/Quarter
Ammonia Nitrogen, Total (as N)	M-001	µg/L	Grab	1/Quarter
Phenolic Compounds (nonchlorinated)[2]	M-001	µg/L	Grab	1/Quarter
Phenolic Compounds (chlorinated)[2]	M-001	µg/L	Grab	1/Quarter
Endosulfan	M-001	µg/L	Grab	1/Quarter
Endrin	M-001	µg/L	Grab	1/Quarter
HCH[1]	M-001	µg/L	Grab	1/Quarter
Radioactivity	M-001	pCi/L	Grab	1/Quarter
TABLE 1 PARAMETERS FOR PROTECTION OF HUMAN HEALTH – NONCARCINOGENS				
Acrolein	M-001	µg/L	Grab	1/Quarter
Antimony, Total Recoverable	M-001	µg/L	Grab	1/Quarter
Bis (2-chloroethoxy) Methane	M-001	µg/L	Grab	1/Quarter
Bis (2-chloroisopropyl) Ether	M-001	µg/L	Grab	1/Quarter

Parameter[1]	Monitoring Location	Units[2, 3]	Sample Type	Minimum Sampling Frequency
Chlorobenzene	M-001	µg/L	Grab	1/Quarter
Chromium (III)	M-001	µg/L	Grab	1/Quarter
Di-n-butyl Phthalate	M-001	µg/L	Grab	1/Quarter
Dichlorobenzenes[1]	M-001	µg/L	Grab	1/Quarter
Diethyl Phthalate	M-001	µg/L	Grab	1/Quarter
Dimethyl Phthalate	M-001	µg/L	Grab	1/Quarter
4,6-dinitro-2-methylphenol	M-001	µg/L	Grab	1/Quarter
2,4-dinitrophenol	M-001	µg/L	Grab	1/Quarter
Ethylbenzene	M-001	µg/L	Grab	1/Quarter
Fluoranthene	M-001	µg/L	Grab	1/Quarter
Hexachlorocyclopentadiene	M-001	µg/L	Grab	1/Quarter
Nitrobenzene	M-001	µg/L	Grab	1/Quarter
Thallium, Total Recoverable	M-001	µg/L	Grab	1/Quarter
Toluene	M-001	µg/L	Grab	1/Quarter
Tributyltin	M-001	µg/L	Grab	1/Quarter
1,1,1-trichloroethane	M-001	µg/L	Grab	1/Quarter
TABLE 1 PARAMETERS FOR PROTECTION OF HUMAN HEALTH – CARCINOGENS				
Acrylonitrile	M-001	µg/L	Grab	1/Quarter
Aldrin	M-001	µg/L	Grab	1/Quarter
Benzene	M-001	µg/L	Grab	1/Quarter
Benzidine	M-001	µg/L	Grab	1/Quarter
Beryllium, Total Recoverable	M-001	µg/L	Grab	1/Quarter
Bis (2-chloroethyl) Ether	M-001	µg/L	Grab	1/Quarter
Bis (2-ethlyhexyl) Phthalate	M-001	µg/L	Grab	1/Quarter
Carbon Tetrachloride	M-001	µg/L	Grab	1/Quarter
Chlordane[1]	M-001	µg/L	Grab	1/Quarter
Chlorodibromomethane (dibromochloromethane)	M-001	µg/L	Grab	1/Quarter
Chloroform	M-001	µg/L	Grab	1/Quarter
DDT[1]	M-001	µg/L	Grab	1/Quarter
1,4-dichlorobenzene	M-001	µg/L	Grab	1/Quarter
3,3'-dichlorobenzidine	M-001	µg/L	Grab	1/Quarter
1,2-dichloroethane	M-001	µg/L	Grab	1/Quarter
1,1-dichloroethylene	M-001	µg/L	Grab	1/Quarter
Dichlorobromomethane	M-001	µg/L	Grab	1/Quarter
Dichloromethane (Methylene Chloride)	M-001	µg/L	Grab	1/Quarter
1,3-dichloropropene (1,3-Dichloropropylene)	M-001	µg/L	Grab	1/Quarter
Dieldrin	M-001	µg/L	Grab	1/Quarter
2,4-dinitrotoluene	M-001	µg/L	Grab	1/Quarter
1,2-diphenylhydrazine	M-001	µg/L	Grab	1/Quarter
Halomethanes[1]	M-001	µg/L	Grab	1/Quarter
Heptachlor	M-001	µg/L	Grab	1/Quarter
Heptachlor Epoxide	M-001	µg/L	Grab	1/Quarter
Hexachlorobenzene	M-001	µg/L	Grab	1/Quarter
Hexachlorobutadiene	M-001	µg/L	Grab	1/Quarter
Hexachloroethane	M-001	µg/L	Grab	1/Quarter
Isophorone	M-001	µg/L	Grab	1/Quarter

Parameter[1]	Monitoring Location	Units[2, 3]	Sample Type	Minimum Sampling Frequency
N-nitrosodimethylamine	M-001	µg/L	Grab	1/Quarter
N-nitrosodi-N-propylamine	M-001	µg/L	Grab	1/Quarter
N-nitrosodiphenylamine	M-001	µg/L	Grab	1/Quarter
PAHs[2]	M-001	µg/L	Grab	1/Quarter
PCBs[2]	M-001	µg/L	Grab	1/Quarter
TCDD equivalents[2]	M-001	µg/L	Grab	1/Quarter
1,1,2,2-tetrachloroethane	M-001	µg/L	Grab	1/Quarter
Tetrachloroethylene (Tetrachloroethene)	M-001	µg/L	Grab	1/Quarter
Toxaphene	M-001	µg/L	Grab	1/Quarter
Trichloroethylene (Trichloroethene)	M-001	µg/L	Grab	1/Quarter
1,1,2-trichloroethane	M-001	µg/L	Grab	1/Quarter
2,4,6-trichlorophenol	M-001	µg/L	Grab	1/Quarter
Vinyl Chloride	M-001	µg/L	Grab	1/Quarter

1 The analytical test method is as required under 40 CFR part 136.
2 See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order
3 The Mass Emission Rate (MER), in lbs/day, is also reported as calculated based on the following equation:
MER (lbs/day) = 8.34 x Q x C, where Q is the flow rate at the monitoring location and C is the concentration in mg/L.
4 During interim operations while using the existing pumps, the flowrate for flow-augmentation dilution water shall be calculated based on the rated flow of pumps in service
5 Report the total daily effluent flow.
6 If a Discharger can demonstrate to the satisfaction of the San Diego Water Board (subject to State Water Board and U.S. EPA approval) that an analytical method is available to reliably distinguish between strongly and weakly complexed cyanide, performance goals for cyanide may be met by the combined measurement of free cyanide, simple alkali metals cyanides, and weakly complexed organometallic cyanide complexes. In order for the analytical method to be acceptable, the recovery of free cyanide from metal complexes must be comparable to that achieved by the approved method in 40 CFR part 136, as revised May 14, 1999.

At times including but not limited to plant start-up, during or after plant maintenance, or other times when the Facility is not delivering product water to the regional water system, the Facility may temporarily discharge flows without the concentrated reverse osmosis brine. During such times, monitoring is required to ensure compliance with permit provisions. The Discharger shall monitor the effluent at monitoring location M-001 when not discharging brine as follows:

Table E-4. Effluent Monitoring at M-001 when not Discharging Brine

Parameter[1]	Unit[2,3]	Sample Type	Minimum Test Frequency
Flow	MGD	Recorder/Totalizer	Continuous[4]
Total Suspended Solids	mg/L	Grab	1/Quarter
pH	Standard units	Grab	1/Quarter
Oil and Grease	mg/L	Grab	1/Quarter
Settleable Solids	ml/L	Grab	1/Quarter
Turbidity	NTU	Grab	1/Quarter
Salinity	ppt	Grab	1/Quarter
TCDD equivalents[2]	µg/L	Grab	1/Quarter

1 The analytical test method is as required under 40 CFR part 136.
2 See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order
3 The Mass Emission Rate (MER), in lbs/day, is also reported as calculated based on the following equation:
MER (lbs/day) = 8.34 x Q x C, where Q is the flow rate at the monitoring location and C is the

concentration in mg/L.

[4] Report the total daily effluent flow.

C. Whole Effluent Toxicity (WET) Testing Requirements

Whole Effluent Toxicity (WET) refers to the overall aggregate toxic effect of an effluent measured directly by an aquatic toxicity test(s). The control of WET is one approach this Order uses to control the discharge of toxic pollutants. WET tests evaluate the 1) aggregate toxic effects of all chemicals in the effluent including additive, synergistic, or antagonistic toxicity effects; 2) the toxicity effects of unmeasured chemicals in the effluent; and 3) variability in bioavailability of the chemicals in the effluent.

Monitoring to assess the overall toxicity of the effluent is required to answer the following questions:

- Does the effluent comply with the Order's effluent limitations for toxicity thereby ensuring that water quality standards are achieved in the receiving water?
- If the effluent does not comply with the Order's effluent limitations for toxicity, are unmeasured pollutants causing risk to aquatic life?
- If the effluent does not comply with the Order's effluent limitations for toxicity, are pollutants in combinations causing risk to aquatic life?

1. Monitoring Frequency for Chronic Toxicity

The Discharger shall conduct chronic toxicity testing on effluent samples collected at Monitoring Location M-002 in accordance with the following schedule and requirements:

Table E-5. Whole Effluent Toxicity Testing

Test	Unit	Sample Type	Minimum Test Frequency
Chronic Toxicity	Pass/Fail; % Effect	24-hr Composite	1/Month

The chronic IWC is calculated by dividing 100 percent by the dilution ratio. Because chronic toxicity is sampled at M-002 which is following dilution from the flow-augmentation water, the only remaining dilution available is from the ocean. Therefore, the IWC for chronic toxicity is calculated only using dilution from the ocean, 5.75, and not the total dilution, 22.83. For further information regarding the calculation of the dilution factor, please see section II.B. of the Fact Sheet. IWC = 1/minimum initial dilution factor (Dm) = 1/5.75 = 0.174 = 17.4%. The "in-stream" waste concentration (IWC) for this discharge is 17.4 percent effluent.

2. Sample Volume and Holding Time

The total sample volume is determined by the specific toxicity test method used. Sufficient sample volume must be collected to perform the required toxicity test. Sufficient sample volume shall also be collected during accelerated monitoring for subsequent Toxicity Identification Evaluation (TIE) studies, if necessary, at each sampling event. All toxicity tests shall be conducted as soon as possible following sample collection. No more than 36 hours shall elapse before the conclusion of sample collection and test initiation.

3. Chronic Marine Species and Test Methods

Chronic toxicity testing shall be performed using species and test methods outlined in *Short-Term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to West Coast Marine Estuarine Organisms* (EPA/600/R-95/136) or *Procedures Manual for Conducting Toxicity Tests Developed by the Marine Bioassay Project* (State Water Board, 1996).

Table E-6. Approved Tests for Chronic Toxicity

Species	Test	Tier [1]	Reference[2]
Giant Kelp, *Macrocystis pyrifera*	percent germination; germ tube length	1st	a, c
Red Abalone, *Haliotis rufescens*	abnormal shell development	1st	a, c
Oyster, *Crassostrea gigas*; or Mussels, *Mytilus spp.*	abnormal shell development; percent survival	1st	a, c
Urchin, *Strongylocentrotus purpuratus*; or Sand Dollar, *Dendraster excentricus*	percent normal development	1st	a, c
Urchin, *Strongylocentrotus purpuratus*; or Sand Dollar, *Dendraster excentricus*	percent fertilization	1st	a, c
Mysid Shrimp, *Holmesimysis costata*	percent survival; growth	1st	a, c
Mysid Shrimp, *Mysidopsis bahia*	percent survival; fecundity	2nd	b, d
Topsmelt, *Atherinops affinis*	larval growth rate; percent survival	1st	a, c
Silversides, *Menidia beryllina*	larval growth rate; percent survival	2nd	b, d

1 First tier methods are preferred for compliance monitoring. If first tier organisms are not available, the Discharger can use a second tier test method following approval by the San Diego Water Board.

2 Protocol References:

a. Chapman, G.A., D.L. Denton, and J.M. Lazorchak. 1995. *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms*. U.S. EPA Report No. EPA/600/R-95/136.

b. Klemm, D.J., G.E. Morrison, T.J. Norberg-King, W.J. Peltier, and M.A. Heber. 1994. *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Marine and Estuarine Organisms*. U.S. EPA Report No. EPA-600-4-91-003.

c. SWRCB 1996. *Procedures Manual for Conducting Toxicity Tests Developed by the Marine Bioassay Project*. 96-1WQ.

d. Weber, C.I., W.B. Horning, I.I., D.J. Klemm, T.W. Nieheisel, P.A. Lewis, E.L. Robinson, J. Menkedick and F. Kessler 9eds). 1998. *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms*. EPA/600/4-87/028. National Information Service, Springfield, VA.

4. Species Sensitivity Screening

Species sensitivity screening shall be conducted during this Order's first required sample collection after the effective date of this Order, or within 24 months of the most recent screening, whichever is later. The Discharger shall collect a single effluent sample to initiate and concurrently conduct three toxicity tests using a vertebrate, an invertebrate, and an alga species referenced in Table E-6. This sample shall also be analyzed for the parameters required on a monthly or more frequency for the discharge, during that given month. If the result of all three species is "Pass" then the species that exhibits the highest "Percent Effect" at the discharge IWC during species sensitivity screening shall be used for routine monitoring. If only one species fails, then that species shall be used for routine monitoring. Likewise, if two or more species result in "Fail" then the species that exhibits the highest "Percent Effect" at the discharge IWC during the suite of species sensitivity screening shall be used for routine monitoring.

Species sensitivity rescreening is required every 24 months. The Discharger shall rescreen with the vertebrate, invertebrate, and alga species previously referenced, and continue to monitor with the most sensitive species. If the first suite of rescreening tests demonstrates that the same species is the most sensitive then the rescreening does not need to include more than one suit of tests. If a different species is the most sensitive or if there is ambiguity, then the Discharger shall proceed with suites of screening tests for a minimum of three, but not to exceed five suites.

The species used to conduct the routine toxicity monitoring shall be the most sensitive species from the most recent species sensitivity screening. During the calendar month, toxicity tests used to determine the most sensitive test species shall be reported as effluent compliance monitoring results for the chronic toxicity maximum daily effluent limitation (MDEL).

Dilution and control water shall be uncontaminated natural seawater obtained from an unaffected area of the receiving waters or laboratory water prepared and used as specified in the test methods manual. The sensitivity of wild-caught/outdoor-reared test organisms to a reference toxicant must be determined concurrently with each toxicity test and reported with test results. Monthly reference toxicant testing is sufficient for laboratory-cultured organisms.

5. Quality Assurance (QA) and Additional Requirements

Quality assurance (QA) measures, instructions, and other recommendations and requirements are found in the test methods manual previously referenced. Additional requirements are specified below.

a. The discharge is subject to determination of "Pass" or "Fail" from a chronic toxicity test using the Test of Significant Toxicity (TST) statistical t-test approach described in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010), Appendix A, Figure A-1 and Table A-1 and Appendix B, Table B-1. The null hypothesis (Ho) for the TST statistical approach is:

Ho: Mean discharge IWC response ≤ 0.75 × Mean control response.

A test result that rejects this null hypothesis is reported as "Pass". A test result that does not reject this null hypothesis is reported as "Fail". This is a t-test (formally Student's t-Test), a statistical analysis comparing two sets of replicate observations—in the case of WET, only two test concentrations (i.e., a control and IWC). In conformance with requirements contained in 40 CFR part 136, a series of five dilutions are required to be tested, while only two of the test concentrations are compared. The results from the additional dilutions tested may be used for informational purposes. The purpose of this statistical test is to determine if the means of the two sets of observations are different (i.e., if the IWC or receiving water concentration differs from the control; the test result is "Pass" or "Fail"). The Welch's t-test employed by the TST statistical approach is an adaptation of Student's t-test and is used with two samples having unequal variances. The relative "Percent Effect", for reporting purposes, at the discharge IWC is defined and reported as:

$$\% \text{ Effect at IWC} = \frac{(\text{Mean control response} - \text{Mean discharge IWC response})}{\text{Mean control response}} \times 100$$

b. The MDEL for chronic toxicity is exceeded and a violation will be flagged when a toxicity test during routine monitoring results in "Fail" in accordance with the TST approach.

c. If the effluent toxicity test does not meet all test acceptability criteria (TAC) specified in the referenced test method, *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms)* (EPA/600/R-95/136), the test should be declared invalid, then the Discharger must resample and re-test within 14 days of test termination.

d. Dilution water and control water, including brine controls, shall be uncontaminated natural seawater obtained from an unaffected area of the receiving waters or laboratory water prepared and used as specified in the test methods manual. If dilution water and control water is different from test organism culture water, then a second control using culture water shall also be used.

e. Monthly reference toxicant testing is sufficient for laboratory-cultured organisms. All reference toxicant test results should be reviewed and reported using the effects concentration at 50 percent (EC50).

f. The Discharger shall perform toxicity tests on final effluent samples. If the effluent is chlorinated and discharged without further treatment, then chlorine shall not be removed from the effluent sample prior to toxicity testing without written approval by the San Diego Water Board. However, ammonia shall not be removed from the effluent sample prior to toxicity testing, unless explicitly authorized under this section of this MRP and the rationale is explained in the Fact Sheet (Attachment F).

6. Preparation of an Initial Investigation Toxicity Reduction Evaluation (TRE) Work Plan

The Discharger shall update and submit their Initial Investigation TRE Work Plan within 90 days of the effective date of this Order. The TRE Work Plan shall be subject to the approval of the San Diego Water Board and shall be modified as directed by the San Diego Water Board. If the San Diego Water Board does not disapprove of the work plan within 60 days, the work plan shall become effective. The Discharger shall use *Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluation (*EPA/600/2-88/070) and other relevant U.S. EPA guidance manuals, or the most current version. This TRE Work Plan shall describe the steps that the Discharger intends to follow if toxicity is detected, and shall include at a minimum:

a. A description of the investigation and evaluation techniques that will be used to identify potential causes and sources of toxicity, effluent variability, and treatment system efficiency;

b. A description of the Discharger's methods of maximizing in-house treatment efficiency and good housekeeping practices, and a list of all chemicals used in the operation of the Facility; and,

c. If a TIE is necessary, the name and title of the individual responsible for conducting the TIE (i.e., an in-house expert or an outside contractor).

7. Accelerated Monitoring Schedule for Maximum Daily Single Result: "Fail"

The Maximum Daily single result shall be used to determine if accelerated testing needs to be conducted. If the Maximum Daily single result exceeds the MDEL, the Discharger shall notify the San Diego Water Board and implement the accelerated monitoring schedule within five calendar days of becoming aware of this result. However, if the